PATENT

Attorney Docket No. A-68851-1/RMS/VEJ
Attorney Matter No. 469249-00162
Application No. 09/493,741

REMARKS

Reconsideration of this Application is respectfully requested. Upon entry of the foregoing amendments, claims 27-49 are pending in the application, with claims 27, 28 and 38 being the independent claims. Support for the subject matter of the amended claims is contained in the application as originally filed. Because the foregoing changes introduce no new matter, their entry is respectfully requested.

Based on the above Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 27, 28 and 30-32

The Examiner has rejected claims 27, 28 and 30-32 under 35 U.S.C. § 102 as being anticipated by published application no. GB 1 241 539 to American Hospital Supply ("the American application"). The American application lacks the apparatus for solid-phase synthesis of the present invention including a centrifuge having a solid-phase support secured thereto and adapted for solid phase synthesis, as is called for by amended claims 27 and 28.

The American application does not disclose such a feature. Instead, the American patent discloses a cell-washing centrifuge and method for washing and treating blood cells. *See* page 1, lines 75 *et seq*. The essential steps of the method are illustrated in FIGS. 6-9 and include (i) placing blood cells 60 into test tubes 26 (FIG. 6), (ii) centrifuging washing fluid 46 into test tubes 26 (FIG. 7), (iii) completely dispersing blood cells 60 within the washing fluid 46 (FIG. 8), and (iv) decanting washing fluid 46 (FIG. 9). *See* page 3, line 106, through page 4, line 39. In fact, the American application teaches away from the present invention because the blood cells are not secured to a solid-phase support secured to the reaction vessel and are, instead, completely dispersed within the washing fluid. *See* page 4, lines 27-29; FIG. 8.

In contrast, the apparatus of the claimed invention is adapted for solid-phase synthesis and includes at least one reaction vessel including a solid-phase support which is secured to the reaction vessel and is adapted for solid-phase synthesis. *See, e.g.*, specification page 9, line 30, through page 10, line 16. In one embodiment, the solid-phase support is firmly attached to the reaction vessel. *See* specification page 9, line 30 *et seq*. In another embodiment, the solid-phase support is a modified interior surface of the reaction vessel. *See* specification page 9, line 36 *et seq*. In both instances, the solid phase will not be expelled from the reaction vessel during centrifugation.

For at least these reasons, Applicant respectfully submits that the American application does not anticipate presently amended claim 27 or 28. Applicant submits that claims 30-32 and new claims 33-38, which claims depend from claims 27 and 28, are allowable over the cited art for at least the same reasons noted above.

Claims 27, 28 and 30-32

The Examiner has also rejected claims 27, 28 and 30-32 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 3,712,535 to Genese *et al.* ("the Genese patent"). The Genese patent lacks the apparatus for solid-phase synthesis of the present invention including a centrifuge having a solid-phase support secured thereto and adapted for solid phase synthesis, as is called for by amended claims 27 and 28.

The Genese patent does not disclose such a feature. Instead, the Genese patent discloses a centrifuge rotor and sample holder for performing a series of operations on a blood sample contained in a vial. *See* abstract; FIG. 2. In particular, the Genese patent discloses an apparatus including a turntable 10 supporting a plurality of pivotally mounted trunnions 30 which, in turn, support a number of test tubes or vials 38. *See* column 3, lines 40-50. To perform each test, a measured amount of red blood cells are manually placed in a vial. *See* column 13, lines 19 *et seq*. Similar to the American patent noted above, the Genese patent teaches away from the present invention because the blood cells are not secured to a solid-phase support secured to the

reaction vessel and are, instead, allowed to swirl and completely mix with saline discharged into the vial. *See* column 13, lines 51-65.

In contrast, and as noted above, the apparatus of the claimed invention is adapted for solid-phase synthesis and includes at least one reaction vessel including a solid-phase support secured to the reaction vessel and adapted for solid-phase synthesis. The solid-phase support may be firmly attached to the reaction vessel or may be a modified interior surface of the reaction vessel. In both instances, the solid phase will not be expelled from the reaction vessel during centrifugation.

For at least this reason, Applicant respectfully submits that the Genese patent does not anticipate presently amended claim 27 or claim 28. Applicant submits that claims 30-32 and new claims 33-38, which depend from claims 27 and 28, are allowable over the cited art for at least the same reason noted above.

Rejections under 35 U.S.C. § 103

Claim 29

The Examiner has rejected claim 29 under 35 U.S.C. § 103 as being unpatentable over Japanese patent application no. JP 64-83153 A to Tamai ("the Tamai application") in view of the Genese patent. The Tamai application and Genese patent, taken individually or combined, fail to disclose or suggest the claimed apparatus for solid-phase synthesis of the present invention including a centrifuge having a solid-phase support secured thereto and adapted for solid phase synthesis, as called for by claims 27 and 28.

As noted above, the Genese patent fails to disclose a solid-phase support. Accordingly, the Genese patent fails to teach or suggest a reaction vessel including a solid-phase support *secured to the reaction vessel* that is adapted for solid-phase synthesis.

The Tamai application likewise fails to disclose or suggest such a feature. The Tamai application discloses an apparatus for measuring micro-immunoassay including a rotor 2 and a

mounting plate 3 for mounting a microplate 4. *See* abstract; FIG. 1. The apparatus is configured to cleanse by spraying a cleaning liquid under the action of centrifugal force. *See id.* While the Tamai application disloses a method in which a reaction product is combined with a solid phase after a peculiar reaction (*see id*), the Tamai application fails to teach or suggest a reaction vessel including a solid-phase support *secured to the reaction vessel* and adapted for solid-phase synthesis.

In contrast, the apparatus of the claimed invention is adapted for solid-phase synthesis and includes at least one reaction vessel including a solid-phase support *secured to the reaction vessel* and adapted for solid-phase synthesis. *See, e.g.*, specification page 9, line 30, through page 10, line 16. The solid-phase support may be firmly attached to the reaction vessel or may be a modified interior surface of the reaction vessel. In both instances, the solid phase will not be expelled form the reaction vessel during centrifugation.

For at least these reasons, Applicant respectfully submits that the Tamai application and the Genese patent do not render presently amended claims 27 and 28 obvious. Applicant submits that claim 29, which depends from claims 27 and 28, is allowable over the cited art for at least the same reasons noted above.

Other Matters

Applicant respectfully submits that new claims 33-38 are allowable over the prior art of record for at least the same reasons as independent claims 27 and 28 noted above.

Applicant respectfully submits that new claims 39-49 are also allowable over the prior art of record. New claim 39 calls for an apparatus including:

> a) a centrifuge comprising a rotor rotatable about an axis of rotation which includes at least one reaction vessel at a fixed angle tilted with respect to said axis of rotation so that an open end of said at least one reaction vessel is pointed away from said axis of rotation; and
> b) a waste reservoir connected to said centrifuge to hold liquids expelled from said reaction vessels.

The art of record, including the American application, the Genese patent and the Tamai application, taken individually or combined, fails to disclose or suggest a reaction vessel at a fixed angle tilted with respect to an axis of rotation, that is, immovably tilted such that an open end of the reaction vessel points away from the axis of rotation. *See* specification page 14, lines 26-28. Claim 39 is directed to one embodiment of the present invention in which the angle of a reaction vessel is fixed and which angle cannot be changed flexibly. *See id.* ("The holder(s) may either hold one or more of the reaction vessels [i] in a fixed tilted position or [ii] in a position which the angle of tilt can be changed flexibly").

The American application instead discloses a cell washing centrifuge which moveably supports test tubes 26 in an inwardly directed tilted position (e.g., FIGS. 6-8) and in a position that is substantially parallel to the axis of rotation of drive shaft 19 (e.g., FIG. 9). Thus, the American application fails to teach or suggest a reaction vessel having a fixed angle tilted away from the axis of rotation.

The Genese patent instead discloses a turntable 10 having a plurality of pivotally mounted trunnions 30 which moveably support a number of test tubes or vials 38. *See* FIG. 2. Thus, the Genese patent also fails to teach or suggest a reaction vessel having a fixed angle tilted away from the axis of rotation.

The Tamai application discloses a rotor 2 and a mounting plate 3 for mounting a microplate 4. *See* FIG. 1. As microplate 4 is oriented horizontally, wells 44 are oriented vertically. Thus, the Tamai application also fails to teach or suggest a reaction vessel (e.g., well 44) having a fixed angle titled away from the axis of rotation.

For at least these reasons, Applicant submits that new independent claim 39 and new claims 40-49, dependant thereon, are allowable over the cited art of record.

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CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extension of time or additional claims, and/or credit any overpayment to Deposit Account No. 50-2319 (Order No. 469249-00162; Docket No. A-68851-1/RMS/VEJ).

Prompt and favorable consideration of this Amendment and Response is respectfully requested.

Respectfully submitted,

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By: _____
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